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PATENT ABSTRACTS OF JAPAN

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(54) MANUFACTURE OF SILICON THIN FILM

(57) Abstract:

PURPOSE: To enable formation of a continuous silicon thin film having a film thickness of 300 \AA ; or less by arranging a substrate inside a vacuum CVD device, by heating an interior of the device to 400 to 550 $^{\circ}\text{C}$, by supplying pure disilane thereto, and by forming silicon by vapor growth at a growth speed of 60 \AA /minute or less on the substrate.

CONSTITUTION: A substrate is arranged inside a vacuum CVD device. An interior of the device is heated to 400 to 550°C and silicon is formed by vapor growth at a growth speed of 60Å/minute or less on the substrate by supplying pure disilane thereto to form a silicon thin film. As for the disilane, ones which do not contain other silane such as monosilane or trisilane are suitable. The disilane can be supplied by diluting with gas such as nitrogen, hydrogen, helium, and argon. Thereby, disilane is decomposed inside a vacuum CVD device at a specified temperature to form silicon on the substrate uniformly by vapor growth and continuous silicon thin film having film thickness of 300Å or less and without an island-like interruption can be formed.

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